

DuPont - Fayetteville
EPA ID# NCD 047 368 642

Larry Stanley



CHERIE K. BERRY
COMMISSIONER

DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
RALEIGH FIELD OFFICE

April 24, 2006

Mr. Dexter Matthews
Department of Environmental and Natural Resources
1646 Mail Service Center
Raleigh, NC 27699-1646



Dear Mr. Matthews:

In response to your referral concerning safety and/or health hazards at:

✱ E.I. DuPont De Nemours and Company
22828 NC Highway 87 W
✱ Fayetteville, NC 28306

A Compliance Safety and Health Officer (CSHO) for the Occupational Safety and Health Administration conducted an inspection at the above facility. The inspection was opened on February 2, 2006 and completed on April 4, 2006.

The results of our investigation of your referral items are as follows:

1. The facility manufactures Ammonium Perfluorooctanoate (APFO) and medical records for employees have shown biological monitoring results exceeding normal levels in the blood. Eight to ten employees in the APFO unit are exposed to the chemical during the manufacturing process.

During the opening conference the employer described the APFO manufacturing process and the various tasks the field technicians and quality control employee performed. The employer also provided the Compliance Safety and Health Officer (CSHO) job descriptions and Standard Operating Procedures describing employees' tasks. The employer also provided biological monitoring data and air sampling results. The biological monitoring data confirmed that employees working in the APFO area had elevated levels of APFO in their serum samples. The CSHO determined through records review that DuPont began offering a voluntary blood monitoring program for APFO in October 2002. The CSHO reviewed the blood monitoring results from June 2005 and December 2005/ January 2006. Thirty-three employees were

sampled in December 2005/ January 2006. The levels ranged from 6.67ng/mL- 4540 ng/mL. Several employees' December 2005 /January 2006 blood monitoring results had increased since the June 2005 sampling. There are no NC OSH regulations, consensus standards, or American Conference of Governmental Industrial Hygienists (ACGIH) guidelines for APFO biological monitoring; therefore, no citations were recommended.

Employer and employee interviews revealed employees were required to wear airline respirators and full butyl suits when working in the oxidation and purification areas. Once exiting the area employees were required to immediately shower to decontaminate their butyl suits. Showers were located immediately outside of the process areas. Employer and employee interviews determined that the employer did not have written decontamination procedures, nor did the employer require employees to decontaminate for a required amount of time. Full face respirators were worn when working with the totes containing APFO. The CSHO reviewed the employer's Personal Protective Equipment Hazard Assessments, Hazard Communication Program, Respiratory Protection Program, including the physician's written opinion, fit tests results, and the cartridge change out policy. The records review did not reveal any program deficiencies. During employee interviews the employees showed the CSHO their PPE and described the PPE requirements. During the walk through portion of the inspection the CSHO observed the facility housing the PPE storage area, PPE washing area, break area, and restroom and shower area. During the second day onsite the CSHO took wipe samples of the break area, restroom door, and a decontaminated butyl suit. The wipes samples determined APFO was on each of the three surfaces sampled. The break table contained .12ug/100cm², restroom door contained 1.6ug/100cm², and the decontaminated butyl suit contained 3.7ug/100cm² of APFO. There are no NC OSH regulations, consensus standards, or American Conference of Governmental Industrial Hygienists (ACGIH) guidelines for APFO surface contaminants; therefore, no citations were recommended.

During the second day on-site the CSHO also evaluated the employer's proposed new lunch area and locker room facility, ref., COD APFO-06-10, New APFO Lunch and Locker Room Trailer. Will Luttrell, Mechanical Process Engineer stated it was DuPont's goal to have two separate facilities, one would be designated as a clean facility and the other as a dirty facility. It was proposed to move both facilities to the southwest section of the property since wind direction is usually northeast. The buildings would also have upgraded HVAC systems to include replaceable HEPA filters. At the time of the inspection, the initial project had been approved.

Employee interviews revealed that one employee was concerned that contract maintenance employees did not follow decontamination procedures. The CSHO opened an inspection with Fluor Enterprises and interviewed the maintenance employee who worked in the APFO area. The employee interview determined that the employee was not aware of the hazards associated with APFO nor was the employee familiar with the specific requirements of decontaminating after each entrance into the oxidation and purification areas. The CSHO reviewed DuPont's contractor safety program and the training requirements for contractors. The CSHO also reviewed the specific training provided by Fluor Enterprises to their employees. Due to employee training deficiencies, Fluor Enterprises received citations.

On the second day on-site the CSHO also conducted 8 hour time weighted average (TWA)

personal sampling for the control room technician, field technician, and the quality control technician. Employee interviews confirmed that the tasks during sampling was a true representation of an average day. Sampling results indicated that the Quality Control Technician and the Control Room Technician were exposed to APFO levels below the detection limit. The Field Technician's 8-hour TWA was .001 mg/m³. The ACGIH threshold limit value (TLV) for airborne exposure to APFO is .01 mg/m³. There are no NC OSH regulations nor other consensus standard regulating airborne exposures to APFO; therefore, citations were not recommended.

ACGIH states that APFO has a skin notation of A3, which states it is a Confirmed Animal Carcinogen with Unknown Relevance to Humans. As noted above, there are not specific occupational health and safety regulations for APFO and since it has "Unknown Relevance to Humans," the CSHO could only make recommendations for decreasing APFO exposures and could not recommend citations for the elevated APFO blood levels nor the APFO surface contaminants.

During the closing conference on April 4, 2006, the CSHO made the following recommendations:

1. Written housekeeping procedures for cleaning all surfaces in the control room, QC Lab, break room, PPE storage area, PPE washing area, and shower areas. Cleaning should be done daily until wipe samples prove it is not necessary.
2. Written decontamination procedures that give specific requirements on the amount of time for shower decontamination. Incorporate long handle brushes and/or any other tools that may assist in decontamination procedures. Conduct wipe samples to evaluate decontamination procedures.
3. Contract an outside laboratory to analyze wipe samples. Internally, wipe samples are not analyzed at a detection range that is as low as the laboratory used by NCDOL.
4. Hand washing basins throughout the APFO process area. Specifically, have hand washing basins outside of the PPE storage facility and lunch/locker facility.
5. In the new lunch room/ locker facility, design the facility to allow employees to enter the bathroom first, shower second, and then the locker room area. Have exit doors in the locker room areas. The doors should be equipped with panic bars so that employees can exit but not enter through these locations.
6. Designate the bathrooms in the new facility to be used at the beginning of the shift, lunch time, and at the end of the shift. Designate the bathrooms in the PPE storage area for general purpose. This should limit the access into the lunch room and locker areas.

Attached for your information is a copy of the OSHA-2, Citation and Notification of Penalty, which was sent to the employer on and should have been posted at the workplace for at least three days after receipt.